

## ABSTRACT

The invention relates to substrate material for X-ray optical components for X-rays of wavelengths  $\lambda_R$ , comprising a glass ceramic material with a glass phase made of amorphous material and with a crystal phase containing microcrystallites. The amorphous material has a positive thermal expansion and the microcrystallites have a negative thermal expansion, and the stoichiometric ratio of crystal to glass phase is set such that the thermal expansion  $\alpha$  of the glass ceramic material, within a temperature range of 20°C to 100°C, is  $< 5 \times 10^{-6} \text{K}^{-1}$ , particularly  $< 1 \times 10^{-6} \text{K}^{-1}$ , whereby the average quantity of the microcrystallites is  $< 2\lambda_R$ , preferably  $< \lambda_R$ , particularly preferred  $< 2/3 \lambda_R$ , especially  $< \lambda_R/2$ . The invention is characterized in that the substrate material, after a surface treatment, has a roughness in the High Spatial Frequency (HSFR) range of  $< \lambda_{R/100} \text{rms}$ , preferably  $< \lambda_{R/300} \text{rms}$ .